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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,598	07/29/2003	Dominik J. Schmidt	015114-049120US	1638

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EXAMINER

TRINH, HOA B

ART UNIT PAPER NUMBER

2814

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,598

Applicant(s)

SCHMIDT, DOMINIK J.

Examiner

Vikki H Trinh

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 15-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 6 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0704.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 1 and 15 are objected to because of the following informalities: In claim 1 and claim 15, line 2 and line 4, respectively, after the term "region" the phrase "consisting of" should be inserted thereof. In claim 1, line 8, and claim 15, line 10, "wherein" should be inserted before the term "region," . Appropriate correction is required.
2. Claims 1 and 15 are objected to because of the following informalities: In claim 1, line 8, and claim 15, line the term "separate" is ambiguous because it is not clear what exactly applicant means by the term "separate" since the isolation region is a single region located between the first and the second transistors. For this Office Action, the examiner interprets the term "separate" to mean an invisible dividing line between the left and the right regions of the channel stop region in the isolation region. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-5, 7-8, 15-17, 19-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Admitted Prior Art (APA), fig. 1 and specification, pages 1-2.

APA teaches the method of making an IC having the steps of providing a first diffusion region with a source/drain region of a first transistor 110; providing a second diffusion region with a source/drain region of a second transistor 110; providing an isolation region between the first and second diffusion regions, and selectively implanting a first channel stop implant region 140 and a second channel stop implant region 140 in the isolation region, the first channel stop implant region separate from the second channel stop implant region, as claimed in claims 1 and 15. See fig. 1.

As to claims 2, 16, the first channel stop implant region and the second channel stop implant region define at least a portion of an isolation conductive path 130, 140 between the first diffusion region and the second diffusion region. See fig. 1.

As to claims 3, 17, a separation distance between the first channel stop implant region and the second channel stop implant region is chosen to control a voltage threshold of an isolation region transistor, the isolation region transistor formed by the first diffusion region, the second diffusion region, and the isolation region. See specification, page 2, lines 10-16.

As to claim 4, when the separation distance between the first channel stop implant and second channel stop implant is reduced, the threshold voltage is increased. See specification, page 2, lines 10-16.

As to claim 5, the method further comprising a third diffusion region, wherein the first channel stop implant region and the second channel stop implant region form at least a part of an isolation conductive path between the first diffusion regions the second diffusion region, and the third diffusion region. See fig. 1.

Art Unit: 2814

As to claims 7,19, the method further comprising providing a field oxide region 120 over the isolation region. See fig. 1.

As to claims 8, 20, the method further comprising providing a gate 130 over the field oxide region 120, wherein when a threshold voltage is applied to the gate, current flows in the isolation conductive path 130, 140. See fig. 1 and specification, page 2, lines 10-18.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA.

APA discloses the invention substantially as claimed. However, APA does not explicitly teach that the IC may be an electro-static discharge protection device or a charge pump circuit. Nevertheless, it would have been obvious to one skilled in the art at the time the invention was made to construct the IC of APA and place the IC in an environment so as to use it as an electro-static discharge protection device or a charge pump circuit, since it is a prima facie obvious to an ordinary artisan attempting to maximize the different use of the IC device. See fig. 1.

Allowable Subject Matter

7. Claims 6 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not disclose or fairly teach either in

Art Unit: 2814

singly or in combination a method of making an IC having the step of providing a third diffusion region coupled to a ground pad, and other steps in the claims.

8. Claims 11-14 are allowed.

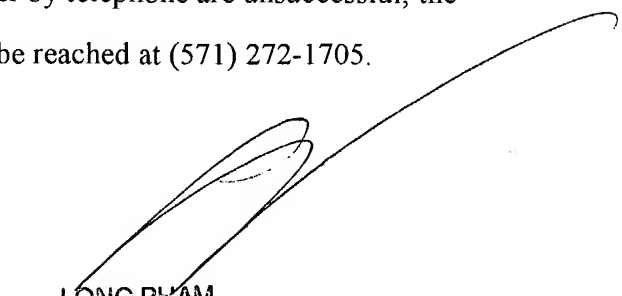
The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or fairly suggest a method of making an IC having the steps of implanting a first channel stop implant region in the first opening and a second channel stop implant region in the second opening in the first isolation region, and a third channel stop region in the third opening in the second isolation region; removing the remaining spacer oxide; growing a field oxide in the first isolation region and the second isolation region; removing the silicon nitride layer; depositing a polysilicon layer; etching the polysilicon layer; and other steps in the claims.

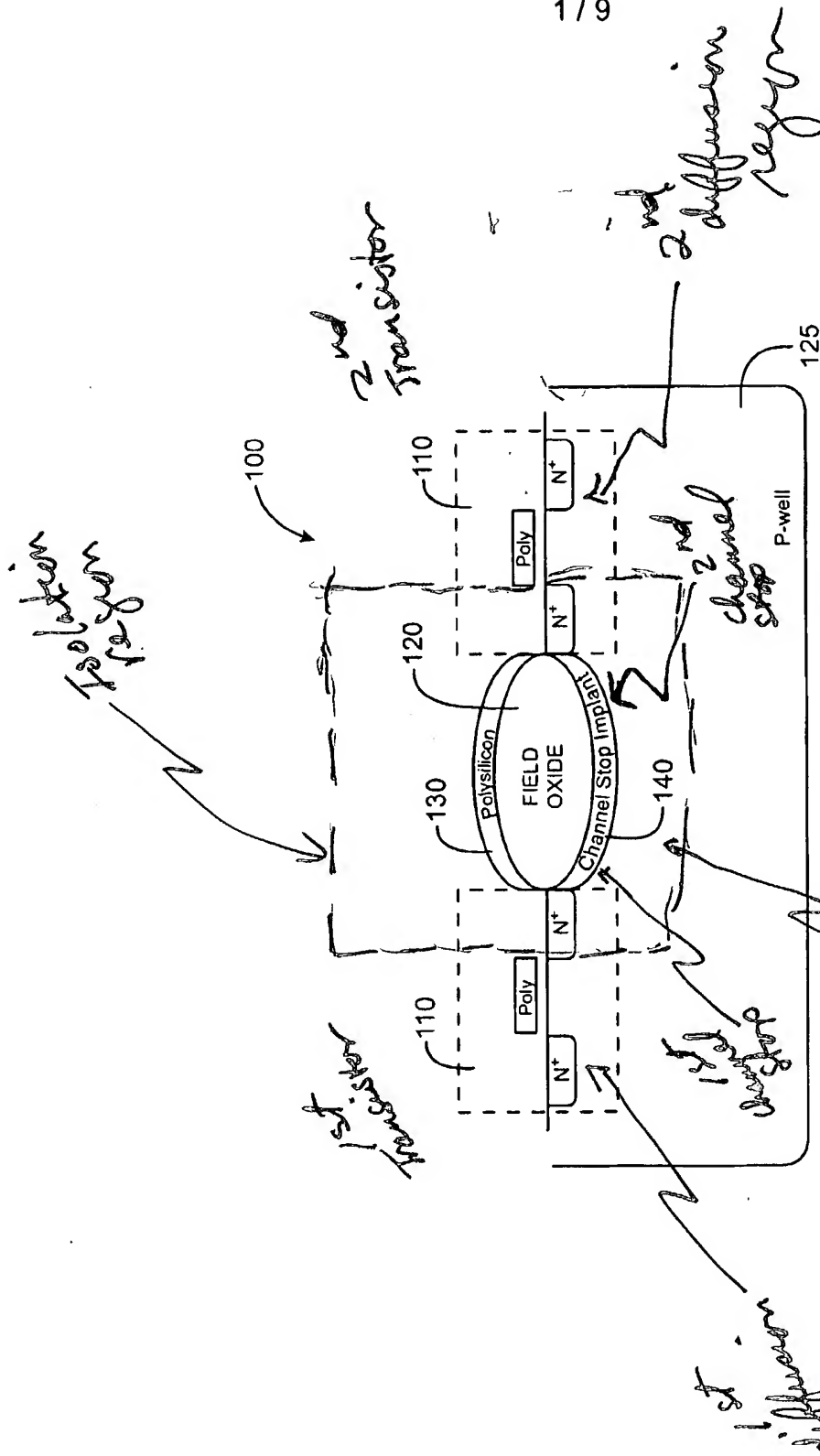
Conclusion

1. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached Mon-Tuesday, Thurs-Friday, 7:30 AM - 6:00 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705.

Vikki Trinh,
Patent Examiner
AU 2814



LONG PHAM
JUNIOR EXAMINER



(PRIOR ART)

FIG. 1